



SustainableEnergy

the low carbon decentralised energy expert

e.on

Your commitment to sustainable business



Legislation is in place today, creating obligations on public and private sector organisations to lower carbon emissions and energy use. By 2016 all new homes will be zero carbon and by 2019, all commercial buildings must achieve the same status. We need to change the way we generate and use energy.

The energy trilemma

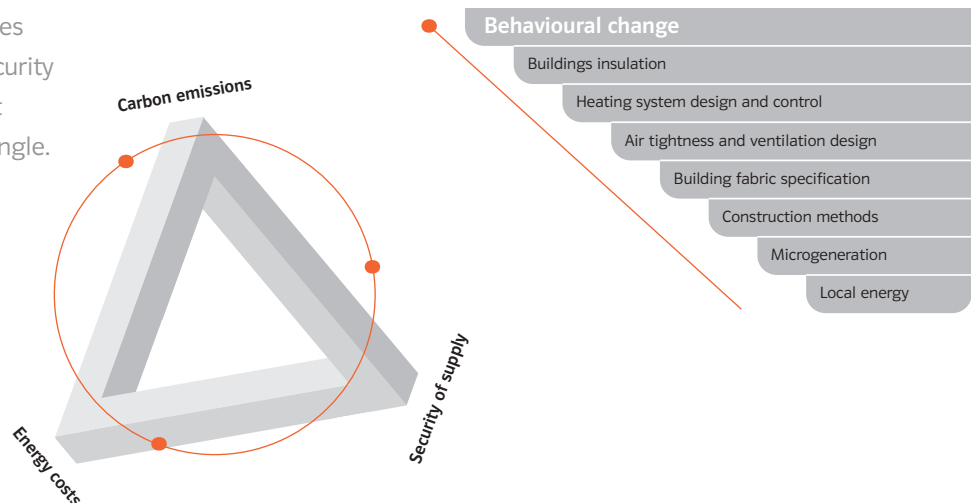
In the twenty first century, energy can be seen as three competing imperatives - carbon, cost and consequence. The lowering of CO₂ emissions can be achieved but it requires significant investment at a time when reducing fuel poverty and offering affordable prices is more important than ever. Combine these two objectives with that of maintaining security of supply and we have what looks like an impossible triangle.

The low carbon economy

Building the low carbon economy means reducing greenhouse gas emissions across every aspect of our society. Improving the security of energy supplies demands the better utilisation of resources and increasing the capacity of low carbon and renewable energy sources.

Influences on energy efficiency

Across our cities, towns and communities there are a number of routes to lowering carbon emissions, reducing energy use and improving energy security that are beyond those of central generation. However, the single most important factor for change is behaviour.



Our commitment to help you

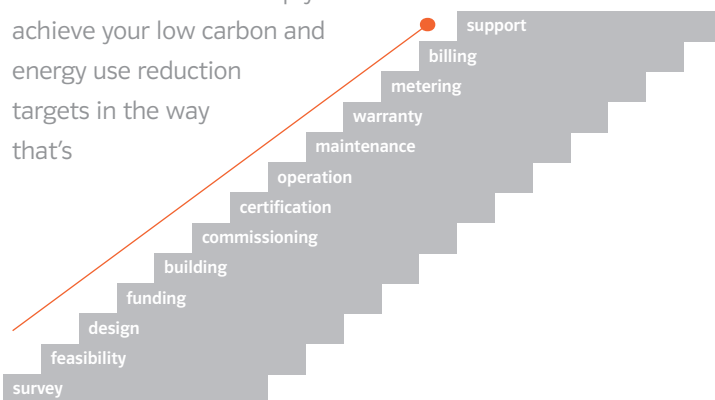


We can offer a balanced approach - from initial advice, planning and independent surveys, to solution design, installation, maintenance, 'smart' metering, billing and 24 hour maintenance support. We can assist with funding and can establish Energy Service Company (ESCO) models for larger projects.

Hassle free solutions

No-one's done more to ensure that, when you need an energy partner to address your queries about creating more sustainable, low carbon energy solutions, we will deliver. We're here to help you achieve your low carbon and energy use reduction targets in the way that's

most suitable to your organisation. Working with a global energy business like E.ON offers peace of mind and access to the capabilities that form a complete solution.



Long-term relationships

Energy solutions must transform into commercial designs to deliver a resilient service to the end user. Organisational resilience is the boardroom priority of the second decade of the 21st century. The five service areas of our business are here to support you.

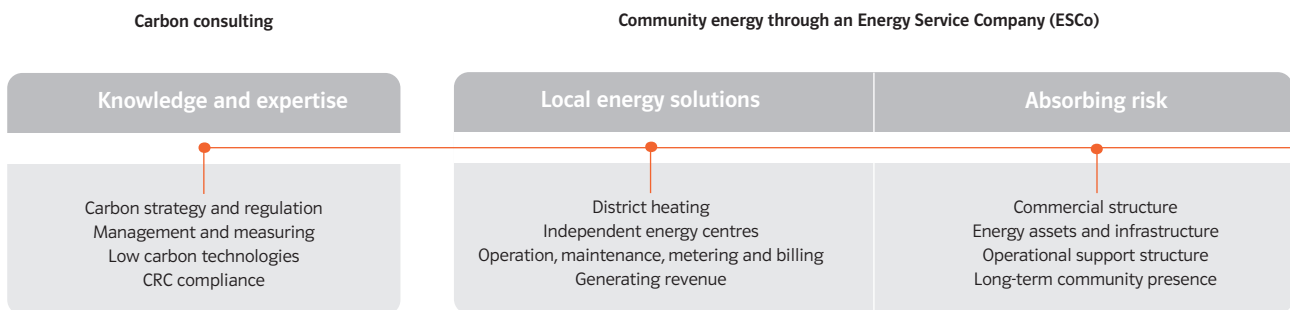
Our five bespoke services

- Carbon consulting
- Low carbon technologies
- Community energy
- Lighting
- Cell site connections

Results from experience



Energy is our business. Its generation, distribution and impact on the environment is our focus. We have the experience and capabilities that come from being part of one of the world’s largest investor-owned power and gas companies.



Carbon Consulting helps you develop a carbon reduction strategy to deliver regulatory compliance, leadership and cost savings. We undertake audits, conduct behaviour change programmes and give you the tools and technologies to help reduce energy consumption. We identify the right low carbon technologies for your organisation and help you manage all of your CRC obligations.

[Read Carbon Consulting](#)

Decentralised energy, or energy produced close to where it is to be used, offers better opportunities for renewable generation, efficiency and business resilience. Over the longer term, it could offer ‘whole life’ savings when compared with traditional means of energy supply because of reduced transmission losses and the opportunity to export surplus electricity generated back to the grid.

[Read Community Energy](#)

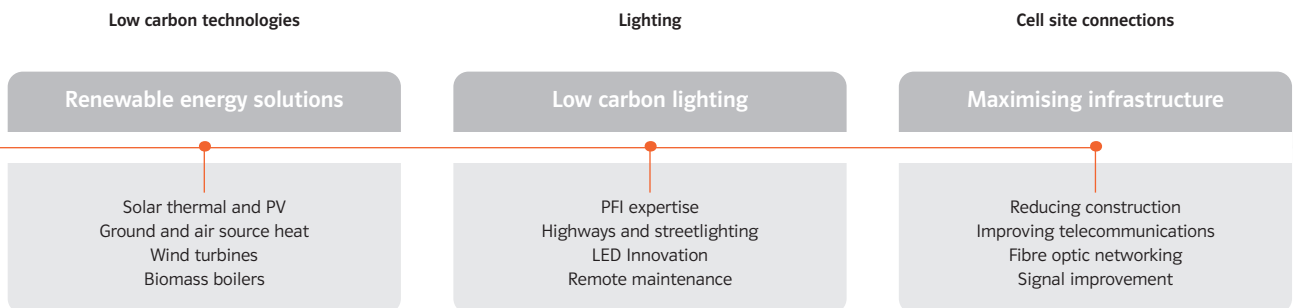
The Energy Service Company (ESCo) is the optimum route for establishing a decentralised energy centre. We have the expertise to deliver a decentralised community energy solution and have the financing mechanism to support it. We operate, maintain and manage a number of ESCOs across the UK and in Europe.

[Read The Guide to ESCOs](#)

Resilience from experience



Our Sustainable Energy business can help you explore every avenue for lowering energy costs and reducing carbon emissions - from changing behaviour to installing renewable microgeneration and from community energy to low carbon lighting.



Microgeneration technologies introduce renewable energy solutions into an existing energy infrastructure, helping you to meet your low carbon targets, obligations and to reduce costs. From solar thermal to solar PV and from ground source heat pumps (GSHP) and air source heat pumps (ASHP), we can specify, install and commission those most appropriate to your needs.

We lead the development of low carbon LED lighting in the UK and work closely with local authorities on the installation of highways and public space lighting. Our Dynamic Management service also allows us to remotely monitor lighting performance, reduces maintenance costs and energy wastage and our innovative Marlin LED lamp can reduce CO₂ emissions and energy by up to 70%. (See note 1 on page 8).

Exploring every way to reduce the impact of energy provision on the environment is at the heart of all we do. One way to do this is to develop the opportunities for our physical infrastructure to be fully utilised in the improvement of telecommunications. Pylons can become radio masts and our cable network can be used to transport fibre optic communication solutions across the nation.

[Read Microgeneration Technologies](#)

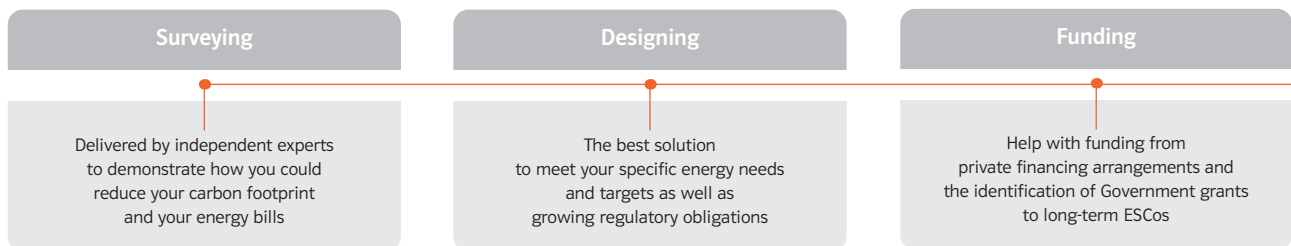
[Read Low Carbon Lighting](#)

[Read Cell Site Connections](#)

A balanced energy solution



When it comes to developing and implementing the low carbon energy solution you need, we've assembled a comprehensive portfolio of services to identify the opportunities available and maximise their impact on your business.



For existing buildings, an audit of energy use and potential savings will demonstrate how you could make reductions in energy use and lower your CO₂ emissions. For large new-build or major refurbishment projects, we provide an Energy Feasibility Study that will identify the optimum route towards achieving your carbon and energy use reduction targets.

From microgeneration solutions to a major decentralised energy centre, we'll design the best solution to meet your specific needs.

- Biofuel or gas CHP energy centres
- Mini CHP solutions
- Solar thermal or PV panels
- Air source heat pumps
- Ground source heat pumps
- Wind turbines
- Low carbon lighting

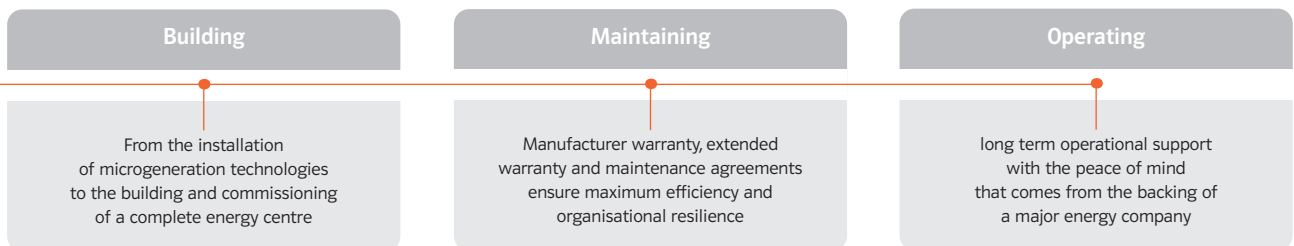
There are funding opportunities available, from Government grants to the Feed-in Tariff which, subject to eligibility, pays you for the electricity you generate¹. We're also able to develop Energy Performance Contracts that generate funding from energy saved and even invest directly in ESCo arrangements.

¹ Available from April 2010 on the following eligible technologies up to 5MW - solar PV, wind, biomass, hydro and anaerobic digestion, if installed after 15 July 2009. If ROCs or LCB P2 have been claimed, a reduced rate or repayment of grant may be applicable. However, eligibility and rates are subject to a final government consultation when combined heat and power may be added to the list.

A complete energy service



We can then design, build and install, commission, maintain and operate your energy solution, help you with funding and deliver peace of mind. We can also provide smart metering and billing, leaving you free to get on with growing your business.



From the installation of solar panels or ground source heat pumps (GSHP), to the complete installation of a biomass-fuelled combined heat and power (CHP) energy centre, we can project manage, install and commission the entire development. Our experienced engineers will be on hand to ensure we deliver a complete, hassle-free and low carbon energy solution.

Our products offer the latest innovations but still carry full manufacturer warranty that can be extended and which is backed by E.ON. Maintenance agreements are also available to ensure maximum operational efficiency and effectiveness. A structured service plan reduces the risk of plant breakdown and the resulting inconvenience. All personnel are trained to the highest standards and approved by equipment providers.

Long-term operational support including full metering and billing management is ensured by the ESCo structure and our own Guaranteed Standards of Service. We can introduce smart technology to help lower energy bills and provide display systems so you and your customers can measure and monitor carbon output. With this support, you'll have the peace of mind that comes from the strength of a major energy company.

Investing in sustainable growth



Our expertise and experience extends from small, microgeneration solutions to the heating, cooling and power requirements of entire cities or communities. Our clients rely on us to successfully deliver and operate their investment.

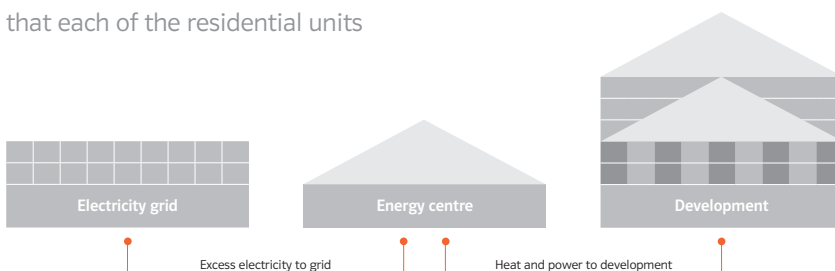
London community energy centre

One of a number of recent large scale energy projects is the management of a community energy centre at Dalston Square in East London. Operated and maintained by an ESCo set up by Sustainable Energy, the centre serves 553 residential units in 5 separate blocks, several retail units and a public library. The energy centre is powered by gas-fired combined heat and power units (CHPs) and gas/biomass boilers.

Having a local, community energy centre at Dalston Square means that each of the residential units

can enjoy an average saving of around 23%¹ on the costs of heating and hot water compared with similar, traditional homes. Carbon emissions at Dalston Square are estimated to be up to 25%² lower than if they were served from the National Grid or by oil-fired systems.

- 1 Based on industry average gas consumption of 20,500kWh per annum for an average dwelling of 100m² with traditional heating costs based on an average gas consumption of 205kWh per m². Consumption per house varies depending on size, number of people, number and type of appliances and location.
- 2 Carbon savings based on Code for Sustainable Homes Level 3.



Low carbon lighting



Rugeley power station, located in Staffordshire and operated by International Power, produces the electricity required by over 500,000 homes. This year, E.ON Sustainable Energy replaced the original site lighting that had reached the end of its life, with 145 of our innovative Marlin 100 LED lamps. This followed an on-site trial during which the energy and carbon benefits could be reviewed by International Power.

Investing in peace of mind



Whether you're a large or small, public or private organisation, you can be assured of the standards we deliver to all our clients and enjoy the peace of mind that comes from the knowledge that we're certified, accountable and independent.

Those benefits are considerable and include -

- Operational cost savings of £85,000¹
- Up to 70%¹ reduction in carbon emissions
- Up to 35%¹ reduction in energy consumption
- LED life in excess of 150,000 hours
- White light source enabling enhanced CCTV imaging and colour rendition
- Minimum and remote maintenance
- Fully controllable dimming and on/off switching

All figures are based on the Rugeley scheme -

¹ Based on a burn time of 4180 hours per lamp per year and a total contract period of 25 years. Total scheme energy consumption is based on 12.0350w for the old SOX scheme and 7.830w for the new LED scheme. Convert to kWh (divide by 100). Carbon savings based on an emissions factor of 0.48kg per kWh. Cost savings based on £0.05 per kWh.

Renewable energy in Almondbury

We're part of one of the UK's largest neighbourhood ground source heat pump (GSHP) schemes at the Ferndale Estate in Almondbury near Huddersfield. On behalf of Kirklees Neighbourhood Housing, winner of the Best Green Initiative award at the annual Corgi awards, E.ON Sustainable Energy is supplying and installing over 150 ground source heat pumps for residents. Residents will not only see their carbon emissions reduce substantially², they'll also enjoy fuel cost savings³.

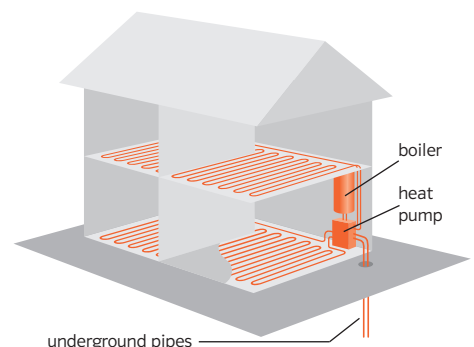
Simon Rogers, KNH Chief Executive said 'To our knowledge, this is one of the biggest single ground source heat pump projects undertaken ...'

² Carbon savings based on an emissions factor of 0.422 kg CO₂ per kWh, an annual heating load of 7,637 kWh with the old heating system and 2,546 kWh with the new GSHP.

E.ON is an MCS certified installer and can access grants under the Government's Low Carbon Building Programme Phase 2 which aims to reduce carbon emissions from buildings in the public and charity sectors. Ground source heat pumps (GSHP) qualify for this grant.

³ Anticipated savings for Kirklees residents based on a typical one bedroom home with a total floor area of 80m², 150W/K heat loss coefficient, radiators and a 110 litre DHW cylinder and an annual heat load of 7,637 kWh. Savings based on an electricity fuel price of 11.39 (based on 2008 UK average Direct Debit bills reviewed in June 2009).

The ground source heat pump



Innovation and experience at your service



Our expertise and experience are at your service.

Sustainable Energy is the low carbon, decentralised energy expert within E.ON. We have the capabilities that comes from being part of a major energy company. We are one of the leaders in providing energy from more sustainable sources and technologies, from small microgeneration systems to large, decentralised, EScO funded, community based energy centres.

We're here to help you achieve your low carbon and energy reduction targets and obligations. Our experience of implementing a balanced approach to more sustainable energy solutions in a wide range of situations gives us a unique insight into how you can continue to grow and improve while delivering financial security and long term organisational resilience.



Imagine what we can do together



If you're considering how your organisation should address its low carbon obligations and opportunities or want to explore how low carbon or renewable energy could enhance and protect your business or brand, call E.ON Sustainable Energy - today.

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